Message

From: Chesnutt, John [Chesnutt.John@epa.gov]
Sent: 3/8/2018 9:37:38 PM
To: LEE, LILY [LEE.LILY@EPA.GOV]
Subject: FW: HP: Regulator's statistical approach
Attachments: EPA memo on statistical sampling approach 2.22.18.pdf

FYI. Forward to other State people as necessary. Hopefully they are indeed OK with this before I send to the Navy later today.

From: Chesnutt, John
Sent: Thursday, March 08, 2018 1:34 PM
To: Anthony.Chu (Anthony.Chu@cdph.ca.gov) <Anthony.Chu@cdph.ca.gov>; Mohsen.Nazemi@dtsc.ca.gov
Cc: Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>; 'Naito, Janet@DTSC' <Janet.Naito@dtsc.ca.gov>; Singh, Sheetal (CDPH-EMB) <sheetal.singh@cdph.ca.gov>; Herrera, Angeles <Herrera.Angeles@epa.gov>
Subject: HP: Regulator's statistical approach

Anthony and Mohsen,

At our meeting with Laura Duchnak on February 16, she asked for backup materials to support the Regulators' calculation that 33% of targeted trench units should be excavated and sampled to achieve the desired 95% confidence level.

EPA's statistician prepared the attached memo and we ran it through your staff.

Enrique asked me to first give you all a heads up of what I plan on sending to Laura later today. It includes the brief summary below and the attached memo.

If something catches your eye that you'd like to discuss, I'll hold it.

Thanks,

John

John Chesnutt
US EPA Region 9
415-972-3005

The attached memo provides details to support the Regulators' proposal for the prove-out of Parcel G trench and building site survey units using full excavation and scanning. In order to support confident decision making that Parcel G trench and building site survey units meet Hunters Point ROD radiological cleanup levels with a high probability, EPA used the Visual Sample Plan (VSP) software tool based on several key assumptions. VSP was developed with support from DOE, EPA, DoD, the Department of Homeland Security (DHS), the Centers for Disease Control (CDC), and the United Kingdom. Applied properly, VSP is a tool that supports the development of a technically credible sampling plan based on statistical sampling theory and the statistical analysis of sample results.

At this site, EPA recommends achieving a high level of confidence. A 95% confidence level has been chosen for the determination of sampling size, with the knowledge that the final confidence will actually be >95% given that all survey units will receive some level of assessment of the presence of radionuclides. Nationwide, this level of confidence is common for ensuring compliance with cleanup standards.

As a first step, EPA recommends prioritizing full excavation of trenches that have the highest concerns (targeted vs. random). Analysis using VSP concluded that if 21 targeted trench units (33% of 63 total) do not show exceedances of cleanup standards (using MARSSIM Class 1 evaluation), then Step 1 would show with 95% confidence that 95% of the total trench units would also not exceed standards. However, if even one trench unit shows exceedances, then we will no longer be able to achieve the desired confidence, and 100% excavation and 100% rescanning would be required for all trench units. If Step 1 shows no exceedances, then Step 2 would conduct further work (using a modified MARSSIM Class 2 or Class 3 evaluation) on the remaining trench units (67%) to increase the confidence level above 95%.

We followed a similar process to calculate the percent sampling required for building site survey units.